ABSTRACT OF THE DISCLOSURE

A method for forming silicon quantum dots and a method for fabricating a nonvolatile memory device using the same, suitable for high speed and high packing density. The method for forming silicon quantum dots includes the steps of forming a first insulating film on a semiconductor substrate, forming a plurality of nano-crystalline silicons on the first insulating film, forming a second insulating film on the first insulating film including the nano-crystalline silicons, partially etching the second insulating film and the nano-crystalline silicons, and oxidizing surfaces of the nano-crystalline silicons.